LESSON MAKER PRO

Which Way Now?

Use signed numbers to track positions and changes.

GRADE 6 · 6.NS.C.9

6.NS.C.9 "Use signed numbers to describe quantities that have opposite directions or values and to represent quantities in real-world contexts."

NAME _____ DATE _____

START AT ZERO

Choose a zero point before you write a signed number. Use a positive number for a gain or a position above zero, and a negative number for a loss or a position below zero. To find a new amount, add the signed change to the starting amount.

WORKED EXAMPLE

A robotic probe starts at 0 cm on a track. It moves 13 cm right, then 16 cm left. What signed number shows its final position?

1. Moving right is +13 cm.
2. Moving left is -16 cm.
3. +13 + (-16) = -3 cm.

Answer: -3 cm, or 3 cm left of the start

PRACTICE 6 problems

1 A submarine is 24 meters below sea level. Write its depth as a signed number of meters.

ANSWER _____

2 The temperature is 9°C above 0°C. Write the temperature as a signed number.

ANSWER _____

3 You owe a friend $18. Write the amount you owe as a signed number of dollars.

ANSWER _____

4 Your game score is -8 points. You earn 6 points. What signed number shows your new score?

ANSWER _____

5 A hiker is at -11 meters relative to the trailhead. The hiker climbs 15 meters. What signed number shows the hiker's new position?

ANSWER _____

6 A drone starts at +20 meters relative to its launch point and descends 26 meters. Give its signed position and tell whether it is above or below the launch point.

ANSWER _____

APPLY IT Show your work

1 In a video game, your score is -14 points after a penalty. You earn 22 points for finishing a level. What signed number shows your new score? Is it above or below zero?

WORK SPACE

ANSWER _____

2 A weather app shows -4°C in the morning. By afternoon, the temperature rises 10°C. What signed temperature does the app show in the afternoon? Is it above or below 0°C?

WORK SPACE

ANSWER _____

CHALLENGE One step up

In a video game, your score starts at -9 points. You gain 21 points, then lose 18 points. What is your final score? Explain why its sign makes sense.

WORK SPACE AND ANSWER

ANSWER KEY

Which Way Now?

GRADE 6 · 6.NS.C.9

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	A submarine is 24 meters below sea level. Write its depth as a signed number of meters.	**-24 meters**
2	The temperature is 9°C above 0°C. Write the temperature as a signed number.	**+9°C**
3	You owe a friend $18. Write the amount you owe as a signed number of dollars.	**-18 dollars**
4	Your game score is -8 points. You earn 6 points. What signed number shows your new score?	**-2 points**
5	A hiker is at -11 meters relative to the trailhead. The hiker climbs 15 meters. What signed number shows the hiker's new position?	**+4 meters**
6	A drone starts at +20 meters relative to its launch point and descends 26 meters. Give its signed position and tell whether it is above or below the launch point.	**-6 meters, below the launch point**

PART 2 · APPLY IT

1. **+8 points, above zero** Add the points earned to the starting score: -14 + 22 = +8.
2. **+6°C, above 0°C** Add the rise to the morning temperature: -4 + 10 = +6°C.

CHALLENGE

-6 points. The 9-point deficit and 18-point loss total 27 points, which is more than the 21-point gain, so the score is negative.

Accept positive answers with or without a plus sign. For the challenge, accept any correct explanation that accounts for the starting score and both changes.